AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-20. (Cancelled)

21. (New) A video encoding method comprising:

dividing a coding target frame into a plurality of blocks, wherein each of the blocks corresponds to a predicted reference image to be generated;

determining a motion vector for each of the blocks;

extracting, for an operable block within the blocks, motion complexity information of the operable block based upon the motion vector of the operable block and the motion vector of each of the blocks in the coding target frame that neighbor the operable block, wherein the complexity information of the operable block indicates a degree of complexity of movement between the operable block of the coding target frame and a corresponding block in a reference frame;

determining, for the operable block, a number of funny position pixels to include in the predicted reference image to be generated for the operable block based upon the motion complexity information of the operable block, wherein the number of funny position pixels included in the predicted reference image increases as the degree of complexity of movement of the operable block increases; and

generating the predicted reference image for the operable block, wherein the predicted reference image for the operable block includes integer pixels located at integer pixel positions within the predicted reference image, interpolated pixels located at interpolated pixel positions within the predicted reference image, and the determined number of funny position pixels.

22. (New) The video encoding method of claim 21, wherein the corresponding block in the reference frame includes a reference image, and wherein the reference image includes reference pixels located at integer pixel positions within the reference image, and wherein generating said predicted reference image for the operable block comprises:

selecting pixel values of the reference pixels included in the reference image of the corresponding block as the pixel values of the integer pixels to include in the predicted reference image.

23. (New) The video encoding method of claim 22, wherein generating the predicted reference image for the operable block further comprises:

generating the interpolated pixels to include in the predicted reference image for the operable block, wherein the interpolated pixels are based upon the reference pixels included in the reference image of the corresponding block and reference pixels in reference images of blocks in the reference frame that neighbor the corresponding block in the reference frame.

24. (New) The video encoder method of claim 23, wherein the interpolated pixels are generated with an interpolation algorithm, and for each of the interpolator pixels, the interpolator algorithm including a high-frequency cutoff characteristic;

wherein the funny position pixels are generated with a low-pass filter, wherein the low-pass filter includes a high-frequency cutoff characteristic; and

wherein for a respective funny position pixel of the funny position pixels, the high-frequency cutoff characteristic of the low-pass filter used to generate the respective funny position pixel is less than the high-frequency cutoff characteristic of the interpolator algorithm used to generate the interpolated pixels that neighbor the respective funny position pixel.

25. (New) The video encoding method of claim 21, further comprising:

generating a predicted image corresponding to the coding target frame as a function of the motion vector determined for each of the blocks of the coding target frame;

calculating a difference between the coding target frame and the predicted image for each of said blocks;

converting the difference between the coding target frame and the predicted image for each of said blocks into a set of coefficients based upon a predetermined conversion rule;

determining the number of non-zero coefficients in each set of coefficients for each of said blocks; and

determining a number of non-zero coefficients in said blocks that neighbor the operable block, wherein the complexity information of the operable block is based upon the number of non-zero coefficients.

26. (New) The video encoding method of claim 21, wherein determining, for the operable block, the number of funny position pixels to include in the predicted reference image, further comprises:

determining whether the degree of complexity of movement of the operable block exceeds a threshold; and

in response to determination that the degree of complexity of movement of the operable block exceeds the threshold, selecting the determined number of funny position pixels to be greater than one.

27. (New) The video encoding method of claim 21, wherein

extracting, for the operable block, the motion complexity information of the operable block further comprises:

calculating a differential motion vector for at least some of the blocks in the coding target frame that neighbor the operable block as a function of the motion vector of the operable block and the motion vector of each of the blocks in the coding target frame that neighbor the operable block.

28. (New) The video encoding method of claim 27, wherein the degree of complexity of movement is based upon at least some of the calculated differential motion vector for each of the blocks in the coding target frame that neighbor the operable block.

29. (New) The video encoding method of claim 21, wherein generating the predicted reference image for the operable block comprises:

selecting pixel values of original pixels within the corresponding block in the reference frame as the pixel values of the integer pixels to include in the predicted reference image for the operable block, wherein the pixel values of the original pixels selected as the pixel values of the integer pixels are unfiltered.

30. (New) The video encoding method of claim 21, wherein generating the predicted reference image for the operable block further comprises:

generating the determined number of funny position pixels, wherein each of the funny position pixels corresponds to one of a plurality of funny position locations within the predicted reference image, wherein each of the funny position locations corresponds to a set of low-pass filter coefficients, and wherein a pixel value for each of funny position pixels is generated based upon the set of low-pass filter coefficients corresponding to said one of the plurality of funny position locations.

31. (New) The video encoding method of claim 30, wherein the determined number of funny pixels includes a funny pixel located at a funny position location, and wherein generating the determined number of funny position pixels further comprises:

calculating the pixel value for the funny position pixel based upon the integer pixels located in a horizontal line of pixels of the coding target frame that are spatially closest to the funny position locations of the funny position pixel.

32. (New) A computer readable media comprising:

computer program code executable on a processor, the computer program code including instructions to:

divide a coding target frame into a plurality of blocks, wherein each of the blocks corresponds to a predicted reference image to be generated;

determine a motion vector for each of the blocks;

extract, for an operable block within the blocks, motion complexity information of the operable block based upon the motion vector of the operable block and the motion vector of each of the blocks in the coding target frame that neighbor the operable block, wherein the complexity information of the operable block indicates a degree of complexity of movement between the operable block of the coding target frame and a corresponding block in a reference frame;

determine, for the operable block, a number of funny position pixels to include in the predicted reference image to be generated for the operable block based upon the motion complexity information of the operable block, wherein the number of funny position pixels included in the predicted reference image increases as the degree of complexity of movement of the operable block increases; and

generate the predicted reference image for the operable block, wherein the predicted reference image for the operable block includes integer pixels located at integer pixel positions within the predicted reference image, interpolated pixels located at interpolated pixel positions within the predicted reference image, and the determined number of funny position pixels.

33. (New) The computer readable media of claim 32, wherein instructions to generate said predicted reference image for the operable block comprises instructions to select pixel values of original pixels of the corresponding block in the reference frame as the pixel values of the integer pixels to include in the predicted reference image.

34. (New) The computer readable media of claim 32, further comprising instructions to:

generate a predicted image corresponding to the coding target frame as a function of the motion vector determined for each of the blocks of the coding

target frame;

calculate a difference between the coding target frame and the predicted image for each of said blocks;

convert the difference between the coding target frame and the predicted image for each of said blocks into a set of coefficients based upon a predetermined conversion rule;

determine the number of non-zero coefficients in each set of coefficients for each of said blocks; and

determine a number of non-zero coefficients in said blocks that neighbor the operable block, wherein the complexity information of the operable block is based upon the number of non-zero coefficients.

35. (New) The computer readable media of claim 32, wherein instructions to determine, for the operable block, the number of funny position pixels to include in the predicted reference image comprise instructions to:

determine whether the degree of complexity of movement of the operable block exceeds a threshold; and

in response to determination that the degree of complexity of movement of the operable block exceeds the threshold, select the determined number of funny position pixels to be greater than one.

36. (New) The computer readable media of claim 32, wherein instructions to extract, for the operable block, the motion complexity information of the operable block comprise instructions to:

calculate a differential motion vector for at least some of the blocks in the coding target frame that neighbor the operable block as a function of the motion vector of the operable block and the motion vector of each of the blocks in the coding target frame that neighbor the operable block; and

wherein the degree of complexity of movement is based upon at least some of the calculated differential motion vector for each of the blocks in the coding target frame that neighbor the operable block.

37. (New) The computer readable media of claim 32, wherein instructions to generate the predicted reference image for the operable block comprise instructions to generate the determined number of funny position pixels, wherein each of the funny position pixels corresponds to one of a plurality of funny position locations within the predicted reference image, wherein each of the funny position locations corresponds to a set of low-pass filter coefficients, and wherein a pixel value for each of funny position pixels is generated based upon the set of low-pass filter coefficients corresponding to said one of the plurality of funny position locations.

38. (New) A video decoding method comprising:

dividing a decoding target frame into a plurality of blocks, wherein each of the blocks corresponds to a predicted image to be generated;

decoding a compressed data stream to generate a motion vector for an operable block and a motion vector for each of the blocks in the decoding target frame that surround the operable block in the decoding target frame;

extracting, for an operable block within the blocks, motion complexity information of the operable block based upon the motion vector of the operable block and the motion vector for each of the blocks in the decoding target frame that surround the operable block, wherein the complexity information of the operable block indicates a degree of complexity of movement between the operable block of the decoding target frame and a corresponding block in a reference frame;

determining, for the operable block, a number of funny position pixels to include in the predicted image to be generated for the operable block based upon the motion complexity information of the operable block, wherein the number of funny position pixels included in the predicted image increases as the degree of complexity of movement of the operable block increases; and

generating the predicted image for the operable block based upon reference pixels of the corresponding block in the reference frame, the reference pixels of blocks in the reference frame that surround the corresponding block,

the motion vector of the operable block, and the motion vector of each of the blocks that surround the operable block in the decoding target frame, wherein the predicted image for the operable block includes integer pixels located at integer pixel positions within the predicted image, interpolated pixels located at interpolated pixel positions within the predicted image, and the determined number of funny position pixels.

39. (New) The video decoding method of claim 38, wherein generating the predicted image for the operable block further comprises:

generating the interpolated pixels to include in the predicted image for the operable block, wherein the interpolated pixels are based upon the reference pixels of the corresponding block in the reference frame and reference pixels of blocks in the reference frame that surround the corresponding block.

40. (New) The video decoder method of claim 38, wherein the interpolated pixels are generated with an interpolation algorithm, and for each of the interpolator pixels, the interpolator algorithm including a high-frequency cutoff characteristic;

wherein the funny position pixels are generated with a low-pass filter, wherein the low-pass filter includes a high-frequency cutoff characteristic; and

wherein for a respective funny position pixel of the funny position pixels, the high-frequency cutoff characteristic of the low-pass filter used to generate

the respective funny position pixel is less than the high-frequency cutoff characteristic of the interpolator algorithm used to generate the interpolated pixels that neighbor the respective funny position pixel.

41. (New) The video decoding method of claim 38, further comprising:

generating a predicted image corresponding to the decoding target frame as a function of the motion vector determined for each of the blocks of the decoding target frame;

calculating a difference between the decoding target frame and the predicted image for each of said blocks;

converting the difference between the decoding target frame and the predicted image for each of said blocks into a set of coefficients based upon a predetermined conversion rule;

determining the number of non-zero coefficients in each set of coefficients for each of said blocks; and

determining a number of non-zero coefficients in said blocks that neighbor the operable block, wherein the complexity information of the operable block is based upon the number of non-zero coefficients.

42. (New) The video decoding method of claim 38, wherein determining, for the operable block, the number of funny position pixels to include in the predicted image, further comprises:

determining whether the degree of complexity of movement of the operable block exceeds a threshold; and

in response to determination that the degree of complexity of movement of the operable block exceeds the threshold, selecting the determined number of funny position pixels to be greater than one.

43. (New) The video decoding method of claim 38, wherein

extracting, for the operable block, the motion complexity information of the operable block further comprises:

calculating a differential motion vector for at least some of the blocks in the decoding target frame that neighbor the operable block as a function of the motion vector of the operable block and the motion vector of each of the blocks in the decoding target frame that neighbor the operable block; and

wherein the degree of complexity of movement is based upon at least some of the calculated differential motion vector for each of the blocks in the decoding target frame that neighbor the operable block.

44. (New) The video decoding method of claim 38, wherein generating the predicted reference image for the operable block further comprises:

generating the determined number of funny position pixels, wherein each of the funny position pixels corresponds to one of a plurality of funny position locations within the predicted image, wherein each of the funny position

locations corresponds to a set of low-pass filter coefficients, and wherein a pixel value for each of funny position pixels is generated based upon the set of low-pass filter coefficients corresponding to said one of the plurality of funny position locations.

45. (New) The video decoding method of claim 44, wherein the determined number of funny pixels includes a funny pixel located at a funny position location, and wherein generating the determined number of funny position pixels further comprises:

calculating the pixel value for the funny position pixel based upon the integer pixels located in a horizontal line of pixels of the decoding target frame that are spatially closest to the funny position locations of the funny position pixel.

46. (New) A tangible computer readable media comprising:

computer program code executable on a processor, the computer program code including instructions to implement the method according to claim 38.

47. (New) A computing system comprising:

a storage medium including stored therein a plurality of executable instructions; and

an processor coupled to the storage medium, the processor configured to

execute at least a subset of the plurality of executable instructions to implement a method according to claim 38.

48. (New) A video encoding method comprising:

dividing a coding target frame into a plurality of blocks;

calculating a plurality of motion vectors for each of the blocks;

determining a degree of complexity of movement for a target block of the plurality of blocks based upon at least one of

an absolute value of differential motion vectors of blocks that surround the target block in the coding target frame,

a summation of non-zero discrete cosine transform coefficients of predicted residual difference images of the blocks that surround the target block in the coding target frame,

and a combination thereof;

in response to determination that the complexity of movement for the target block is below a threshold, calculating a first number of funny position pixels for a predicted reference image of the target block;

in responds to determination that the complexity of movement for the target block is above a threshold, calculating a second number of funny position pixels for the predicted reference image of the target block, wherein the first number of funny position pixels is less than the second number of funny position pixels; and

generating the predicted reference image of the target block, wherein the predicted reference image includes integer pixels located at integer pixel positions, interpolated pixels located at interpolated pixel locations, and the generated funny position pixels located at funny position pixel locations.